Supplement to *Computers, Environment and Urban Systems*,
Volume 21, Number 5

Computers, Environment AND Urban Systems

AN INTERNATIONAL JOURNAL

LIST OF CONTENTS AND AUTHOR INDEX VOLUME 20, 1996

PERGAMON

Computers, Environment and Urban Systems
An International Journal

EDITOR

Paul Longley: School of Geographical Sciences, University of Bristol, University Road, Bristol BS8 1SS, U.K. [*Fax*: (0117) 928 7878; *E-mail*: Paul.Longley@bristol.ac.uk].

NORTH AMERICAN ASSOCIATE EDITOR

Richard E. Klosterman: University of Akron, U.S.A.

EDITORIAL BOARD

Mike Batty
University College London, U.K.

Richard K. Brail
Rutgers University, U.S.A.

Peter Burrough
University of Utrecht, The Netherlands

Barbara P. Buttenfield
University of Colorado. U.S.A.

Arnaldo Cecchini
University Institute of Architecture, Venice, Italy

Graham Clarke
University of Leeds, U.K.

Michael F. Goodchild
University of California, Santa Barbara, U.S.A.

Kingsley E. Haynes
George Mason University, U.S.A.

Lewis D. Hopkins
Institute of Environmental Studies, U.S.A.

Robert Laurini
Claude Bernard University of Lyon, France

Andrew A. Lovett
University of East Anglia, U.K.

David J. Martin
University of Southampton. U.K.

Ian Masser
University of Sheffield, U.K.

Victor Mesev
University of Bristol, U.K.

Atsuyuki Okabe
University of Tokyo, Japan

Peter van Oosterom
Cadastre, Netherlands

P. K. Sikdar
Indian Institute of Technology, Bombay, India

Michael J. Shiffer
Massachusetts Institute of Technology, U.S.A.

Michael Wegener
University of Dortmund, Germany

Michael F. Worboys
Keele University, U.K.

Anthony Yeh
University of Hong Kong

Publishing Office: Elsevier Science Ltd, Bampfylde Street, Exeter EX1 2AH, U.K. [*Tel.*: (01392) 251558; *Fax*: (01392) 425370].

Advertising Office: Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, U.K. [*Tel.*: (01865) 843000; *Fax*: (01865) 843010].

Author Service Department: For queries relating to the general submission of articles (including electronic text and artwork) and the status of accepted manuscripts, please contact the Author Service Department: e-mail: authors@elsevier.co.uk; Fax +44 (0) 1865 843905; Tel: +44 (0) 1865 843900.

Frequency: Published bimonthly in January, March, May, July, September and November.

Copyright © 1998 Elsevier Science Ltd

Subscription Rates: Annual Institutional Subscription Rates 1997: Europe, The CIS and Japan. NLG 1,170.00; all other countries, US$722.00. Associated Personal Subscription rates are available on request for those whose institutions are library subscribers. Dutch Guilder prices exclude VAT. Non-VAT registered customers in the European Community will be charged the appropriate VAT in addition to the price listed. Prices include postage and insurance and are subject to change without notice. Any enquiries relating to subscriptions should be sent to:

The Americas: Elsevier Science Customer Support Department, P.O. Box 945, New York, NY 10010, U.S.A. [*Tel.*: (+1) 212-633-3730/1-888 4ES-INFO; *Fax*: (+1) 212-633-3680. *E-mail*: usinfo-f@elsevier.co.com]. **Japan**: Elsevier Science Customer Support Department, 9–15 Higashi-Azabu 1-chome, Minato-ku, Tokyo 106, Japan [*Tel.*: (+81) 3-5561-5033; *Fax*: (+81) 3-5561-5047; *E-mail*: info@elsevier.co.jp]. **Asia Pacific (*excluding Japan*)**: Elsevier Science (Singapore) Pte Ltd, No. 1 Temasek Avenue, 17-01 Millenia Tower, Singapore 039192 [*Tel.*: (+65) 434-3727; *Fax*: (+65) 337-2230; *E-mail*: asiainfo@elsevier.co.com.sg]. **Rest of the World**: Elsevier Science Customer Service Department. P.O. Box 211. 1001 AE Amsterdam, The Netherlands [*Tel.*: (+31) 20-485-3757; *Fax*: (+31) 20-485-3432; *E-mail*: nlinfo-f@elsevier.nl].

Back Issues: Back issues of all previously published volumes are available direct from Elsevier Science Offices (Amsterdam and New York). Complete volumes and single issues can be purchesed for 1993–1997. Earlier issues are available in high quality photoduplicated copies as complete volumes only.

COMPUTERS, ENVIRONMENT AND URBAN SYSTEMS
VOLUME 20, LIST OF CONTENTS

Volume 20, Number 1 January 1996

CONTENTS

Marianne L. MacDonald	1	A multi-attribute spatial decision support system for solid waste planning
Yvan Bédard **Claude Caron** **Zakaria Maamar** **Bernard Moulin** **Denis Vallière**	19	Adapting data models for the design of spatio-temporal databases
Khaled Hassen **Kate Beard**	43	A reference model framework to evaluate visualization of positional change in spatial databases
Bernard Marchand	63	Simulating negotiations on the computer

Volume 20, Number 2 March 1996

CONTENTS

Seymour J. Mandelbaum	71	Making and breaking planning tools
Hassan A. Karimi **J. A. R. (Rod) Blais**	85	Current and future directions in GISs
David Wong	99	Enhancing segregation studies using GIS
Sumeeta Srinivasan **Varkki George** **Bettina Aten**	111	A computer-based tool for defining regions of similar characteristics
Michael Mainguenaud	139	Constraint-based queries in a geographical database for network facilities

Volume 20, Number 3 May 1996

CONTENTS

Gülen Çağdaş **Lale Berköz**	153	Dynamic behavior of the city center in Istanbul
Hasmiah Kasimin **Mohammed Yusoff**	165	The use of a soft systems approach in developing information systems for development planning: An exploration in regional planning
Tom de Jong **Jan Ritsema van Eck**	181	Location profile-based measures as an improvement on accessibility modelling in GIS
S. Sengupta **R. S. Patil** **P. Venkatachalam**	191	Assessment of population exposure and risk zones due to air pollution using the Geographical Information System
Ni-Bin Chang **S. F. Wang**	201	The development of an environmental Decision Support System for municipal solid waste management
Raphael Sussman	213	Implementing municipal GIS: Human behaviour and the decision-making process

Volume 20, Number 4/5 July/September 1996

Special Issue
DECISION SUPPORT SYSTEMS IN URBAN PLANNING

CONTENTS

Ray Wyatt	225	Editorial: Responsible decision support
F. S. Wang **A. J. Richardson** **F. A. Roddick**	233	SWIM—a computer model for solid waste integrated management
Keechoo Choi **Tschango John Kim**	247	A hybrid travel demand model with GIS and expert systems

Roger Mackett **Marion Edwards**	261	An expert system to advise on urban public transport technologies
Kazuhiko Sakakibara **Yoshikazu Fukui** **Okinori Taniguchi** **Fumiko Perry**	275	The Decision Support System to improve the aesthetics of road design
Karl Kim **Ned Levine**	289	Using GIS to improve highway safety
Leorey O. Marquez **Shiroma Maheepala**	303	An object-oriented approach to the integrated planning of urban development and utility services
William Young **Darrell Bowyer**	313	Modelling the environmental impact of changes in urban structure
Kazuaki Miyamoto **Rungsun Udomsri** **Sathindra Sathyaprasad** **Fuhu Ren**	327	A Decision Support System for integrating land use, transport and environmental planning in developing metropolises
Anthony Gar-On Yeh **Man Hong Chow**	339	An integrated GIS and location–allocation approach to public facilities planning—an example of open space planning

Volume 20, Number 6 November 1996

CONTENTS

A. Laaribi **J. J. Chevallier** **J. M. Martel**	351	A spatial decision aid: A multicriterion evaluation approach
Fulong Wu	367	A linguistic cellular automata simulation approach for sustainable land development in a fast growing region
Miles G. Logsdon **Earl J. Bell** **Frank V. Westerlund**	389	Probability mapping of land use change: A GIS interface for visualizing transition probabilities
Adel S. Aldosary **Syed Aijaz Zaheer**	399	An application mechanism for a GIS-based maintenance system: The case of KFUPM

Hassan A. Karimi
Benjamin H. Houston 413 Evaluating strategies for integrating environmental models with GIS: Current trends and future needs

Jan T. Bjørke
Betty Smith 427 Seriation: An implementation and case study

PII: S0198-9715(98)00013-1

COMPUTERS, ENVIRONMENT AND URBAN SYSTEMS
AUTHOR INDEX, VOLUME 20

Aldosary, A. S., 399
Aten, B., 111

Beard, K., 43
Bédard, Y., 19
Bell, E. J., 389
Berköz, L., 153
Bjørke, J. T., 427
Blais, J. A. R., 85
Bowyer, D., 313

Çağdaş, G., 153
Caron, C., 19
Chang, N.-B., 201
Chevallier, J. J., 351
Choi, K., 247
Chow, M. H., 339

Edwards, M., 261

Fukui, Y., 275

George, V., 111

Hassen, K., 43
Houston, B. H., 413

de Jong, T., 181

Karimi, H. A., 85, 413
Kasimin, H., 165
Kim, K., 289
Kim, T. J., 247

Laaribi, A., 351
Levine, N., 289
Logsdon, M. G., 389

Maamar, Z., 19
MacDonald, M. L., 1
Mackett, R., 261
Maheepala, S., 303
Mainguenaud, M., 139
Mandelbaum, S. J., 71
Marchand, B., 63
Marquez, L. O., 303
Martel, J. M., 351
Miyamoto, K., 327
Moulin, B., 19

Patil, R. S., 191
Perry, F., 275

Ren, F., 327
Richardson, A. J., 233
Ritsema van Eck, J. 181
Roddick, F. A., 233

Sakakibara, K., 275
Sathyaprasad, S., 327
Sengupta, S., 191
Smith, B., 427
Srinivasan, S., 111
Sussman, R., 213

Taniguchi, O., 275

Udomsri, R., 327

Vallière, D., 19
Venkatachalam, P., 191

Wang, F. S., 233
Wang, S. F., 201
Westerlund, F. V., 389
Wong, D., 99
Wu, F., 367
Wyatt, R., 225

Yeh, A. G.-O., 339
Young, W., 313
Yusoff, M., 165

Zaheer, S. A., 399

media@elsevier.co.uk

COMMERCIAL REPRINTS

PUBLISH STRAIGHT TO YOUR MARKET

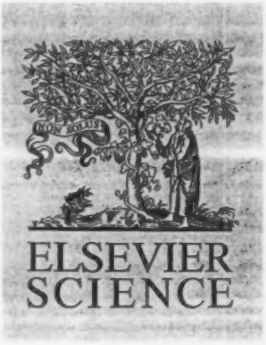
As a service to the commercial market we are able to offer you the opportunity to purchase **Commercial Reprints** enabling you to publish straight to your market.

Bulk reprints of a paper relating to your products or services can provide:

- ***a valuable tool*** **for communicating with your prospective clients via direct mailings, exhibition distribution or for use in product information releases**
- ***an instructive means*** **of informing scientists of the applications of your products**
- ***an educational medium*** **for assisting prospective buyers in understanding the full benefits of your product**
- ***a valuable source*** **of information for your customers at the same time as increasing their awareness of your name**

We are able to repackage papers for you to include company logos, advertising or further product information.

Any of the papers in this journal can be reprinted for your own commercial use. For more information please contact the address below.

CONTACT:

THE ADVERTISING DEPARTMENT
ELSEVIER SCIENCE
The Boulevard
Langford Lane
Kidlington
Oxford
OX5 1GB, UK
TEL: (44) 1865 843565
FAX: (44) 1865 843976
Email: media@elsevier.co.uk